

# Patent Claims

1. A light scanning device for exciting and detecting secondary light, especially fluorescent light, on a sample (22), comprising

a light emission device (10) for emitting exciting light (11) with a wavelength suitable for exciting secondary light on or in said sample (22),

a focussing optics (34, 44) for focussing the exciting light on a subarea of said sample (22),

a sample holding device (20, 21) for releasably holding the sample (22),

a detection unit comprising a detection optics (32, 42) for the secondary light emitted by the sample in response to excitation and a detector device (31, 41) for converting the detected and imaged secondary light into electric signals,

characterized in that the sample holding device is adapted to be rotated for rotating the sample relative to the exciting light in such a way that different subareas of said sample can be excited by means of the exciting light so as to emit secondary light.

2. A light scanning device for exciting and detecting secondary light, especially fluorescent light, on a sample (22), comprising

a light emission device (10) for emitting exciting light (11) with a wavelength suitable for exciting secondary light on or in said sample (22),

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a focussing optics (34, 44) for focussing the exciting light on a subarea of said sample (22),

a sample holding device (20, 21) for releasably holding the sample (22),

a detection unit comprising a detection optics (32, 42) for the secondary light emitted by the sample in response to excitation and a detector device (31, 41) for converting the detected and imaged secondary light into electric signals,

359/210 characterized in that the focussing optics (34, 44) is rotatably supported so as to conduct the exciting light along a circular arc on the sample.

3. A light scanning device according to claim 1, characterized in that the focussing optics is adapted to be radially displaced relative to an axis of rotation of the sample holding device.

4. A light scanning device according to claim 2, characterized in that the sample holder is adapted to be displaced in the radial direction relative to an axis of rotation of the focussing optics.

5. A light scanning device according to one of the claims 1 to 4, characterized in that the detection unit and the focussing optics (34, 44) are coupled together and have, at least partially, a common optical path.

6. A light scanning device according to claim 4, characterized in that the focussing optics (34, 44) and the detection unit have a common beam splitter (33, 43) so as to unite or separate the optical paths of the excitation light and of the secondary light.

7. A light scanning device according to claim 6, character-

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14. A light scanning device according to claim 13, **characterized in that** the detector device and/or the light emission device are coupled to the detection optics and the focussing optics, respectively, for transmitting light via

optical fibres.

15. A light scanning device according to one of the preceding claims, **characterized in that** a colour filter is provided in front of the detector device so as to transmit a specific wavelength of the secondary light.

16. A light scanning device according to one of the preceding claims, **characterized in that** the light emission device comprises a plurality of laser diodes each having a different output wavelength.

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